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A CAHNERS PUBLICATION

DATAMATION®

FOR CORPORATE COMPUTING PROFESSIONALS WORLDWIDE

MARCH 15, 1992

Dennis McEvoy (l.), CEO, and Kim Worsencroft, VP of R&D, Cooperative Solutions Inc., with Ellipse

Client/Server OLTP Arrives!

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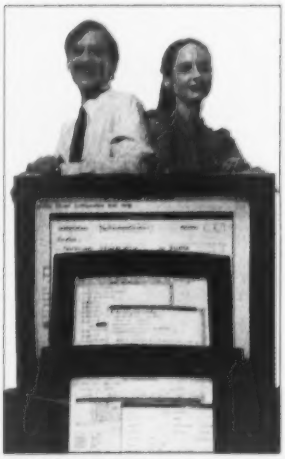

ON THE COVER: Cooperative Solutions's McEvoy (l.) and Worsencroft bring OLTP to your desktop.

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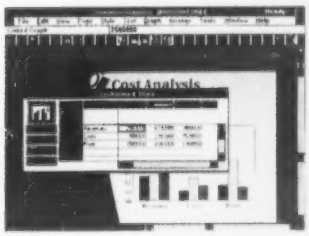

SPECIAL REPORT

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WAN Maintenance Without House Calls

How vendors are making it possible for you to upgrade and maintain your routers and bridges in Perth as if they were just down the hall.

BY TOM McCUSKER

You want to upgrade your bridges and routers with frame relay capability, but there's no one in your Perth, Australia, office who's really up to installing the new software and reconfiguring the hardware. Then you find out that there's something wrong with that internetworking box out in your five-person branch office in Hungary. No one there has a prayer of being able to look under the covers and diagnose the problem, and your vendor only offers limited service on the ground. You just looked at your budget an hour ago, and there's definitely no money to send a technician out from your Chicago headquarters on the next plane.

That's when you might wish you could trade in your travel agent for bridges and routers with remote upgrade, diagnostic and configuration capabilities. If you had such devices, you might be saved the costs of sending someone out to fix problems or update software. You might be saved the expense of a pricey full-time maintenance contract (which may not even be an option outside North America, Western Europe and Japan). Even if you couldn't actually fix every problem, at the least you'd know what the problem is when one comes up.

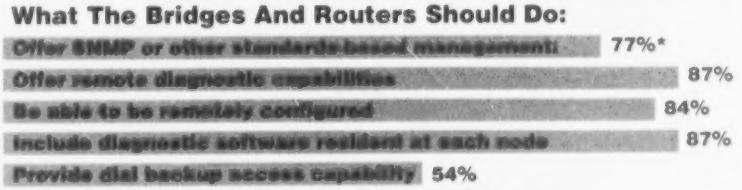
And simply knowing that can save not only money but downtime by reducing the mean time to repair. David Schroeder, manager of service with vendor Vitalink Communications Corp. explains: "Certain network anomalies that appear are not identified immediately to a specific piece of hardware. You may need to take a look at multiple nodes from the one location. That's where the remote diagnostics really helps reduce the mean time to repair."

With diagnostic software resident at each node, the network owner can not only employ an on-site operational technician to look at the problem but also, with remote diagnostic capability, call on the vendor to help solve the problem. Thus you can bring in experts from other locations to look over your shoulder as you're diagnosing a problem. In addition, a lower level of technical expertise can be used at the remote location while higher level technical people at the central site can dial in and do reconfiguration work.

What Support To Expect For Remote Bridges, Routers

Here's a checklist of features to start with when selecting routers and bridges, together with the percentage of vendors supplying such features (according to a DATAMATION survey in January of 100 vendors.)

What The Bridges And Routers Should Do:


Offer SNMP or other standards-based management: 77%*
Offer remote diagnostic capabilities 87%
Be able to be remotely configured 84%
Include diagnostic software resident at each node 87%
Provide dial backup access capability 54%
Allow software upgrades to be done remotely 64%

* % of respondents offering products with these capabilities

Service Options

Direct on-site service: 70% On-site service via a third party: 46%

Level Of Service Offered**

Less than four hours: 33%	One-day service: 36%	More than one day: 10%

**Service levels are generally negotiated with clients, who are usually charged according to the level of service agreed upon.

Where Direct Service Is Available

% of Vendors Offering Direct Support And Service (By Region)

North America	90%	Southeast Asia	16%
Western Europe	46%	South America	13%
Far East	30%	Middle East	13%
Eastern Europe	26%	Australia	11%

Source: DATAMATION

Considering the potential advantages, it's not surprising that remote capabilities, partially driven by the adoption of network management based on standards such as the Simple Network Management Protocol (SNMP), are showing up on more and more devices.

But buyers should be aware that the advantages could be just that—unrealized potential. Comprehensive remote capabilities in bridges and routers are far from universal, and not all of the features in various vendors' products work in a consistent fashion.

For example, DATAMATION has found in a study of about 100 vendors that more than a third don't provide anything that allows you to upgrade software remotely. Almost a quarter sell bridges and routers that don't include a management system based on any standard, such as SNMP.

"SNMP is becoming a must for doing business in an internetworking environment that emphasizes standards and interoperability," says Kurt Bauer, director of product marketing at Fremont, Calif.-based Vitalink.

Now that SNMP is becoming more established, vendors are going beyond its basic capabilities. For example, Cisco Systems Inc., of Menlo Park, Calif., has gone beyond plain vanilla SNMP in its router configuration management software with a graphical interface. "First, it [the interface] gives you a nice picture of the network," says Ed Kozel, director of business development. "What is more productive, though, is that you can click on a router, and it [the software] will bring up the configuration, which you can alter at the console and then remotely download to the remote loader." Cisco also uses the same techniques to download new software to the router.

All the software standards in the world won't help you manage remote devices if you don't have a way to reach those devices when your network is down. That requires a dial backup capability, which is nothing more glamourous than having a modem attached to the remote bridge or router so that you can reach it through the public network if your dedicated lines die. "Nine times out of 10, if you've got a failure to a remote site, it's because of a bad line," says Chuck Berman, senior product manager of internetworking at SynOptics Communications Inc. in Santa Clara. Yet many vendors reported in the DATAMATION survey that they didn't offer a backup dial access capability to remote devices.

Even with dial backup and some level of remote capability, network device reconfiguration, upgrade or maintenance may still result in downtime. Cisco's Kozel explains that in many of the products, these changes can't be activated without rebooting the devices. This is serious should you have 100 of them deployed and each has to be rebooted in turn as they are upgraded. "Avoiding the rebooting," Kozel says, "is a very practical and desirable feature that technically isn't hard to provide, but a lot of devices do not support it. Thus you might have anywhere from between one and 10 minutes of outage for that node in the network, depending on which vendor's equipment it is."

Kozel also cautions network administrators to "look deeply" into devices that can receive downloaded data, such as configuration profiles. He suggests that customers examine how difficult it is to download and whether there is an automated network management system that will do it.

Cisco once required that a customer log into its remote router and ask it to get a fresh configuration file from a central repository. Today, you can initiate remote reconfiguration from a centralized Sun workstation. As Kozel explains: "You mouse over to the router on the screen, change the configuration for the remote router and click on the button that says 'activate,' and it automatically downloads that [new profile]."

SynOptics uses a new chip technology called Flash EEPROM (for electrically erasable read only memory) to download software to routers and bridges. In effect, the new technology enables the software image you transfer to the remote device to be stored forever in nonvolatile random access memory.

The more your network grows, particularly internationally, the more you'll want to buy internetworking devices that you can maintain from afar. Look closely, because today you have to pick and choose to get the level of support that's right for you. ■

Connecting With Bridge, Router Vendors

For more information on the remote capabilities of bridges and routers, circle the appropriate number on the Reader Card to contact the following device vendors.

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Source: DATAMATION

You Can Compute While You Commute

The technologies of the 1980s made it possible to talk on the go, and now technologies of the 1990s are making it possible to compute on the go.

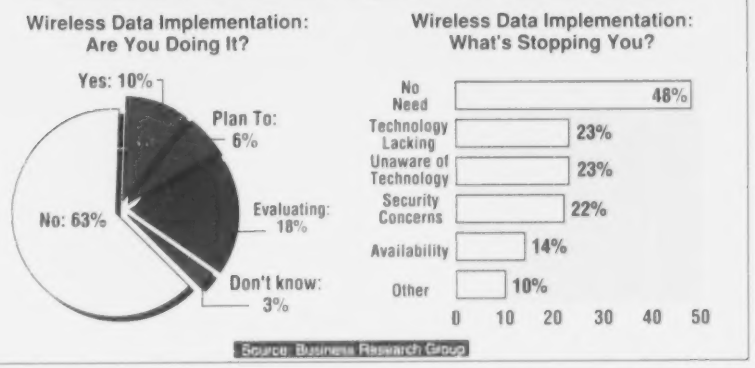
Wireless data communication networks are now publicly available in most major U.S. metropolitan areas. Like cellular telephone networks, these wireless data networks operate using a grid of cells that transfer the radio signal to the public wire networks. The main difference between the two types of networks is that wireless data networks use packet switching while wireless voice networks use circuit switching. Packet-switched wireless data can provide more economical rates than circuit-switched systems because carriers can charge customers by the packets actually sent rather than by the minute.

While still a relatively new service, only 2% of DATAMATION's Technology Panel are unaware of these wireless data communication systems. Indeed, 10% of panel members say that their companies are using wireless data communications—although some of this may be for private networks or may be in the form a specialized mobile radio network. About a quarter of panel members report their company either plans to use or is now evaluating a wireless data network.

The biggest obstacle cited by panel members to the use of wireless data networks is the lack of need for it. But many laptop computer makers now offer wireless data communication capabilities, and the growing use of laptops in the workplace may boost use of wireless data networks as a result. ■

Warren Childs and Kathryn A. Tito, Business Research Group. For more information, call Nancy Finn at (617)-964-6204, send her a fax at (617)-558-4402 or write to her at the Business Research Group, 275 Washington Street, Newton, MA 02158.

Look Ma! No Wires!



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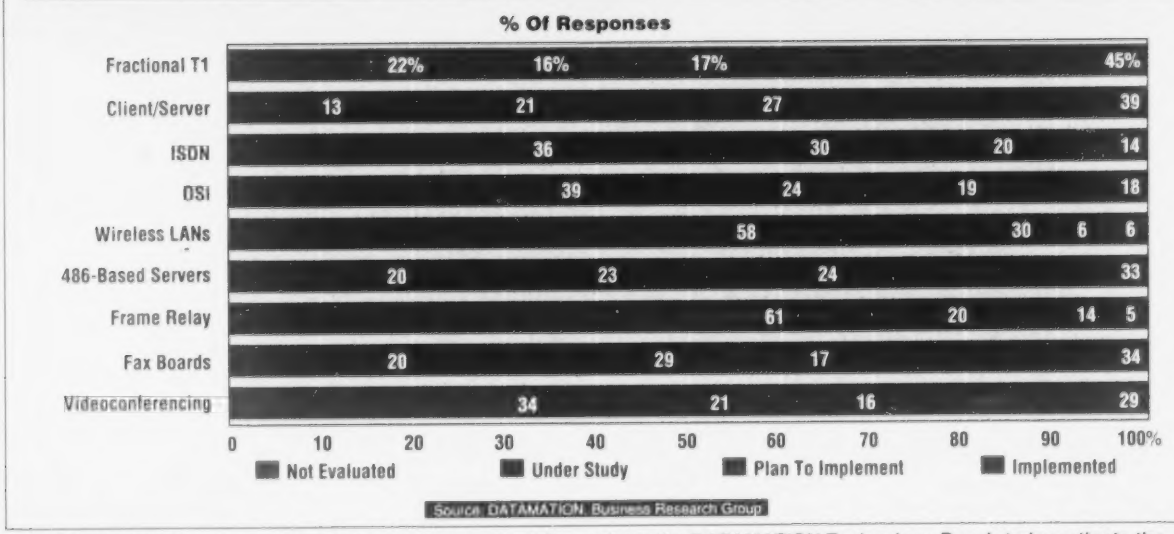
% Of Responses
Fractional T1 22% 16% 17% 45%
Client/Server 13 21 27 39
ISDN 36 30 20 14
OSI 39 24 19 18
Wireless LANs 58 30 6 6
486-Based Servers 20 23 24 33
Frame Relay 61 20 14 5
Fax Boards 20 29 17 34
Videoconferencing 34 21 16 29
0 10 20 30 40 50 60 70 80 90 100%
Not Evaluated
Under Study
Plan To Implement
Implemented
Source: DATAMATION, Business Research Group

■ DATAMATION each month surveys a select group of its readers--the DATAMATION Technology Panel--to investigate the implementation of new technologies by key user organizations.

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